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FATE OF AFLATOXIN M1 DURING CHEESE WHEY PROCESSING

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Aflatoxins are a group of naturally occurring toxins, which are secondary metabolites of some *Aspergillus* spp. When lactating animals ingest aflatoxin B1 (AFB₁) contaminated feedstuffs, aflatoxin M1 (AFM₁) may be excreted to milk. Thus, AFM₁ represents a potential hazardous to humans via consumption of milk and milk products. AFM₁ is less mutagenic and carcinogenic than AFB₁ but it exhibits high genotoxic activity. The maximum admissible level of this mycotoxin in raw milk, heat-treated milk and milk for manufacture of milk-based products was set at 0.05 µg/Kg by the EC.

In cheese production, high amount of a by product – cheese whey – products is obtained. Cheese represents about 10 % of the initial mass of milk. This cheese whey may be further processed when whey is to be turned into more valuable products than animal feed or whey powder. One way is the use of ultra filtration, yielding a protein rich fraction (retentate) and a lactose rich fraction (permeate). Since whey proteins have a number of useful nutritional and functional properties, whey proteins can be used in a wide range of commercial products such as food additives or may be fractionated into individual whey proteins.

The aim of this work was to study the distribution of aflatoxin M1 through the retentate and permeate when whey ultra filtration is carried out. To perform this study, cheese whey was spiked with AFM₁ at a level of 0.1 µg l⁻¹. Under the used experimental conditions it was found that AFM₁ has a higher affinity for the rich protein fraction (retentate). These data will be presented and discussed.

